



Depth of Knowledge



- **Welcome**
- **Agenda**
- **Purpose**

Agenda

- ✓ 1 Clock Partner Activity
- ✓ 2 Jigsaw "Questioning Strategies for Teaching Cognitively Rigorous Curricula"
- ✓ 3 Depth of Knowledge (DOK) video
Write own DOK levels 2,3,4
- ✓ 4 Introduce Walkthrough tool
Video to develop common language
- ✓ 5 Closing activity



Purpose



To provide instructional strategies for increasing rigor through quality questioning.

Clock Partners

Choose your 3, 6, and 9 o'clock partners



Do you remember...Song 1?



Write the name of song #1.



Questioning Strategies for Teaching Cognitively Rigorous Curricula

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Depth of knowledge is a common measure of rigor used extensively at the state level to align assessments with state content standards. However, the use of depth of knowledge at the classroom level is just beginning. In this article, we establish a link between depth of knowledge and the questioning strategies teachers should consider employing during lessons. The result is a systematic strategy for employing peer-shares and group based activities based on the depth-of-knowledge level of the questions. Should use the strategies presented in this article to develop lesson plans that provide enhanced opportunities for students to engage in critical thinking. (Contains 2 tables and 30 references.)

Keywords: depth of knowledge, questioning strategies, rigor, cognitive rigor

1. INTRODUCTION

To meet the demand of teaching students higher-level thinking skills, many states adjust their

content standards and assessment standards making the depth of knowledge level of the questions

Jigsaw activity

- Divide the text sections marked 1-4 so that each member at your table chooses a section to read. (~3 mins)
- Share out a 1 minute summary of each section.
- Table discussion of “ah-ha!’s” (5 mins)

Jigsaw activity



Jigsaw activity

Questions to Consider

**Find your 6
o'clock clock
partner and
discuss**

*What strategies do you
currently engage in with
your students to get to a
deeper depth of
knowledge?*

*What does it look like in
your classroom when
students are authentically
engaged in learning?*

Do you remember...Song 2?



Write the name of song #2.



NYC video

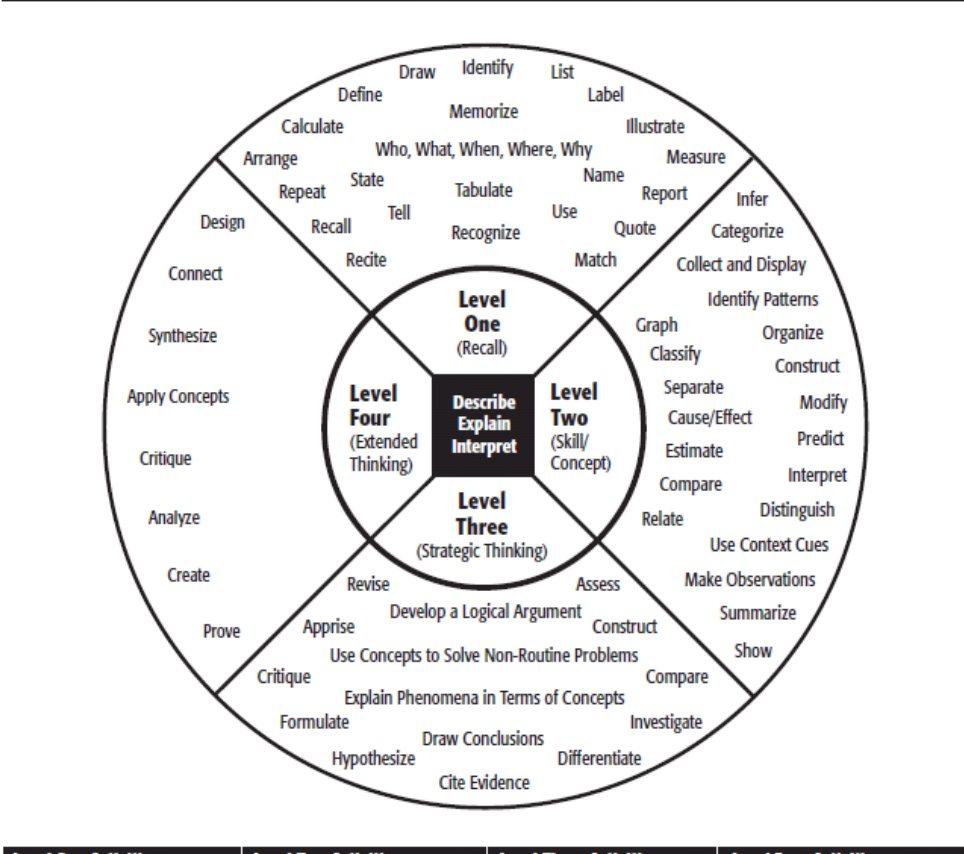
Examples

DOK 1 – Describe three characteristics of metamorphic rocks. (Requires simple recall)

DOK 2 – Describe the difference between metamorphic and igneous rocks. (Requires cognitive processing to determine the difference in the two rock types)

DOK 3 – Describe a model that you might use to represent the relationships that exist within the rock cycle. (Requires deep understanding of rock cycle and a determination of how to best represent it)

Depth of Knowledge (DOK) Levels



Level One Activities	Level Two Activities	Level Three Activities	Level Four Activities
Recall elements and details of story structure, such as sequence of events, character, plot and setting.	Identify and summarize the major events in a narrative.	Support ideas with details and examples.	Conduct a project that requires specifying a problem, designing and conducting an experiment, analyzing its data, and reporting results/ solutions.
Conduct basic mathematical calculations.	Use context cues to identify the meaning of unfamiliar words.	Use voice appropriate to the purpose and audience.	
Label locations on a map.	Solve routine multiple-step problems.	Identify research questions and design investigations for a scientific problem.	Apply mathematical model to illuminate a problem or situation.
Represent in words or diagrams a scientific concept or relationship.	Describe the cause/effect of a particular event.	Develop a scientific model for a complex situation.	Analyze and synthesize information from multiple sources.
Perform routine procedures like measuring length or using punctuation marks correctly.	Identify patterns in events or behavior.	Determine the author's purpose and describe how it affects the interpretation of a reading selection.	Describe and illustrate how common themes are found across texts from different cultures.
Describe the features of a place or people.	Formulate a routine problem given data and conditions.	Apply a concept in other contexts.	Design a mathematical model to inform and solve a practical or abstract situation.
	Organize, represent and interpret data.		

- Choose a content area and write questions for DOKs 2, 3, and 4 (if time permits). ~15 mins

Video activity

What did you find challenging about this activity?

How would you use this activity with teachers in your building?

Do you remember...Song 3?



Write the name of song #3.



Sample Walkthrough Tool

Classroom Walkthrough tool for Continuous Improvement		
Data collection look-fors		
Date:	Course/Content:	
Time:		
Grade:		
1. Focus on curriculum		
1a. Determine the learning objective(s) for the lesson:		
Objective(s):		
<input type="checkbox"/> Exists	<input type="checkbox"/> Does not exist	<input type="checkbox"/> Unable to determine
1b. Learning objective(s) aligned to the specified timeline/scope and sequence:		
<input type="checkbox"/> Aligned	<input type="checkbox"/> Not aligned	<input type="checkbox"/> Unable to determine
1c. Learning objective(s) evident to the students:		
<input type="checkbox"/> Evident	<input type="checkbox"/> Not evident	<input type="checkbox"/> Unable to determine
2. Focus on the learners		
2a. Identify learning materials:		
<input type="checkbox"/> Activity/lab sheet	<input type="checkbox"/> Real-world objects	<input type="checkbox"/> Websites
<input type="checkbox"/> Content-specific manipulatives, materials, and/or models	<input type="checkbox"/> Student-created materials	<input type="checkbox"/> Worksheet
<input type="checkbox"/> Multimedia	<input type="checkbox"/> Technology and software	<input type="checkbox"/> Textbook
<input type="checkbox"/> Published print materials	<input type="checkbox"/> One-to-One device	<input type="checkbox"/> None
2b. Identify ways students acquire, comprehend, and communicate knowledge of the content:		
<input type="checkbox"/> Listening	<input type="checkbox"/> Writing	
<input type="checkbox"/> Reading	<input type="checkbox"/> None	
<input type="checkbox"/> Speaking		
2c. Determine depth of knowledge level(s) of student work:		
<input type="checkbox"/> Level 1 <i>Recall of Information</i> – identify, list, define		
<input type="checkbox"/> Level 2 <i>Basic Reasoning</i> – describe, interpret, explain		
<input type="checkbox"/> Level 3 <i>Complex Reasoning</i> – evaluate, justify, apply		
<input type="checkbox"/> Level 4 <i>Extended Reasoning</i> – analyze, synthesize, provide solutions		
2d. Determine level of class engagement:		
<input type="checkbox"/> Highly engaged – Students are authentically engaged		
<input type="checkbox"/> Well managed – Students are willingly compliant, ritually engaged		
<input type="checkbox"/> Disengaged – Students actively reject the assigned task or substitute another activity		
3. Focus on instruction		
3a. Identify instructional practices:		
<input type="checkbox"/> Coaching	<input type="checkbox"/> Hands-on learning	<input type="checkbox"/> Providing direction/instructions
<input type="checkbox"/> Empowerment	<input type="checkbox"/> Collaborative learning	<input type="checkbox"/> None

Table for 22: A real-world geometry project *video*

Table for 22: A Real-World Geometry Project

Grade 6, Math, Geometry

Common Core Standards: Math.6.G.1

f Like

65



<https://www.teachingchannel.org/videos/real-world-geometry-lesson>

Sample Walkthrough Tool

Video discussion activity

***Can you connect the
Walkthrough tool to what
you saw in the video?***

Do you remember...Song 4?



Write the name of song #4.





Closing activity

Which will you most likely implement with teachers in your school?

- ***DOK questioning***
- ***Grouping strategies***
- ***Walkthrough tool***

Do you remember...Song 5?



Write the name of song #5.





Reflection and Survey

on your own terms

on your own terms

on your own terms

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Music Winner

Did you get all the songs correct?



THANK YOU!